



**Marine Transportation System
Research & Technology Conference
November 16, 2001**

Objectives

- ✧ The MariTEL Network
 - The Marine Telephone Company
 - Telecommunications services for all segments of the marine community
- ✧ Issues facing the maritime community
- ✧ Network features and benefits
- ✧ Network products and services
- ✧ Network performance
- ✧ Network status
- ✧ Network support systems

Humble Beginnings

**First Shore/Ship
Radiotelephone
Call**

**May 20, 1902
Georgetown
Washington, DC**

**Nathan
Stubblefield
to
The S/S Bartholdi**



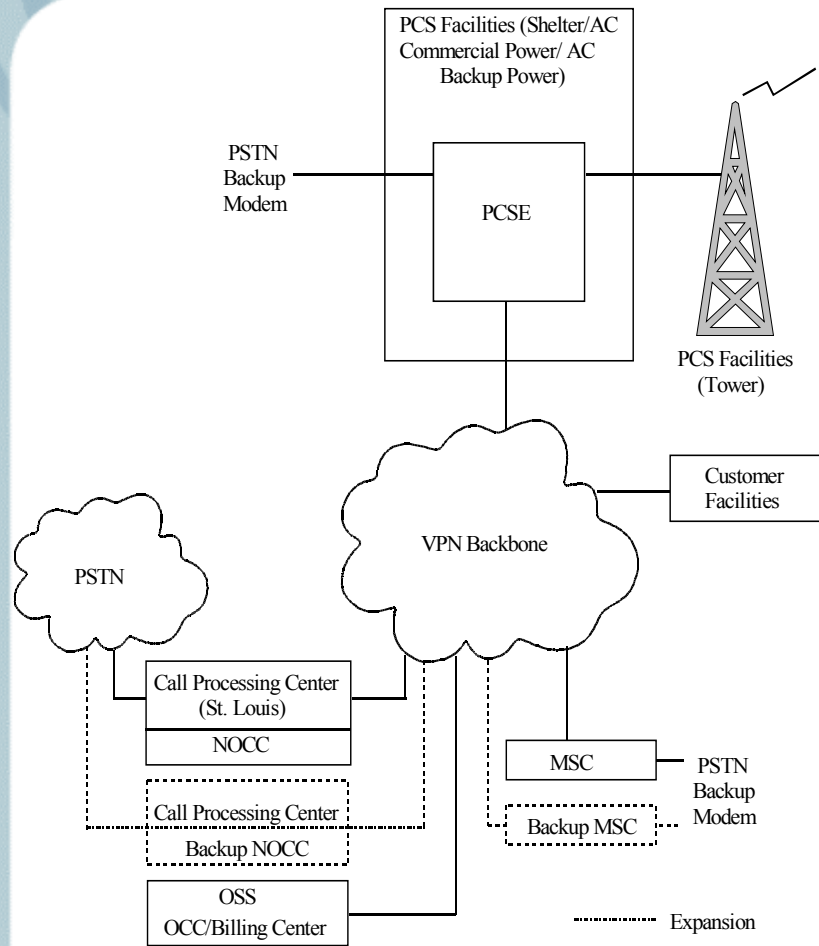
Photo Credit Washington Post Magazine

Commercial Operator Requirements

- ✧ Reliable coverage in Coastal and Inland Waterways
- ✧ Quality Voice, FAX, and Data communications
- ✧ Home & Office communications
- ✧ Vessel Tracking Services



The MariTEL Network



- **PCS** - Public Coast Stations
- **PCSE** - Pubic Coast Station Electronics
- **VPN** - Virtual Private Network
- **CPC** - Call Processing Center
- **OCC** – Operator Call Center
- **OSS** - Operations support systems (billing, maintenance, customer support)
- **NOCC** - Network Operational Control Center for the VPN and Telco leased lines
- **MSC** - Maintenance System Console for the PCSE and PCS Facilities

Team Members

- **MariTEL** is the system owner and operator and provides the maritime domain knowledge
- **Harris** provides overall system integration and the PCSE, including PCS shelter communications equipment, antennas/IFL and MSC
- **American Tower** provides the Public Coast Station facilities, including the shelters, towers, and site facilities/physical plant
- **Williams** provides the network equipment in the PCSE, the network, call processing centers, and NOCC

User Communities

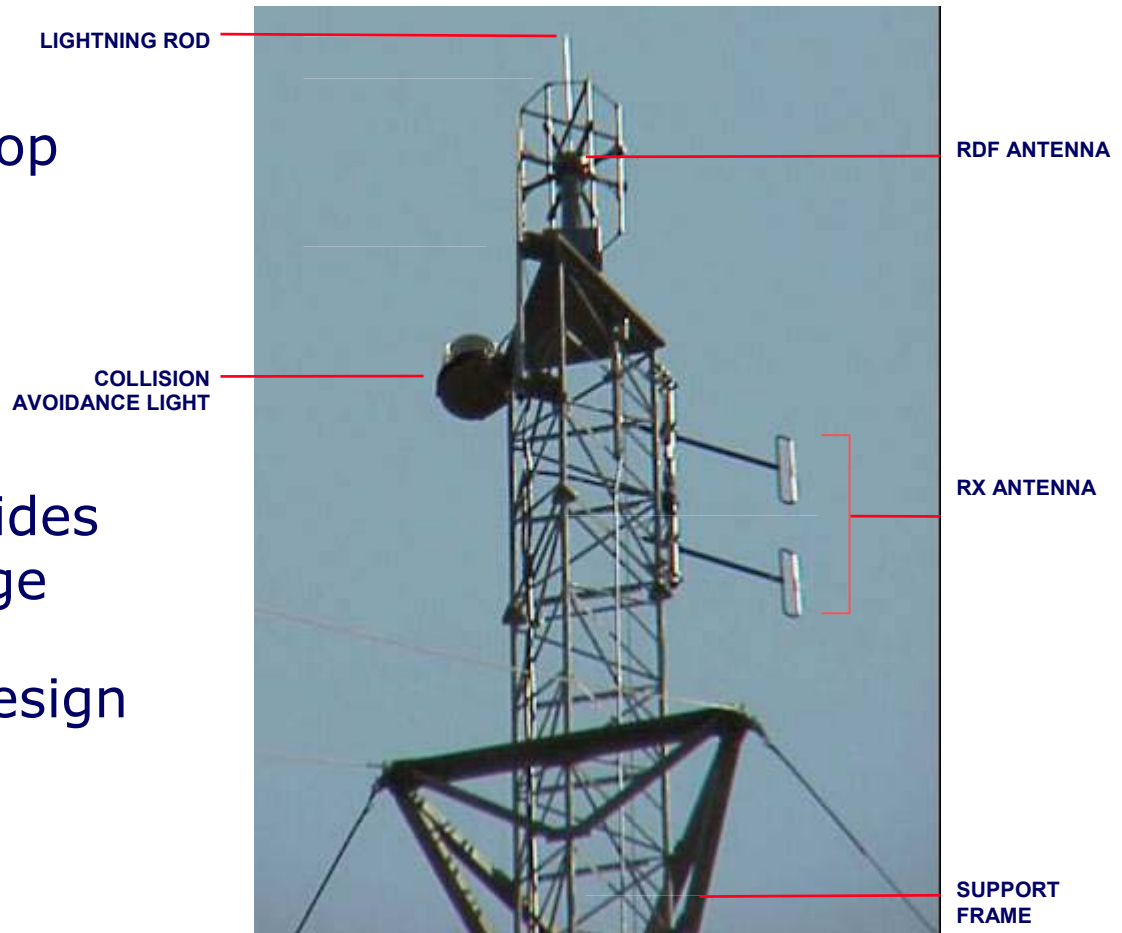
- ✧ Commercial Operators
- ✧ Recreational Boaters
- ✧ USCG Vessel Traffic Centers
- ✧ Ports & Harbors
- ✧ US Army Corps of Engineers
- ✧ Marine Public Safety Agencies



TOWERS

The Tall Pole in The Tent

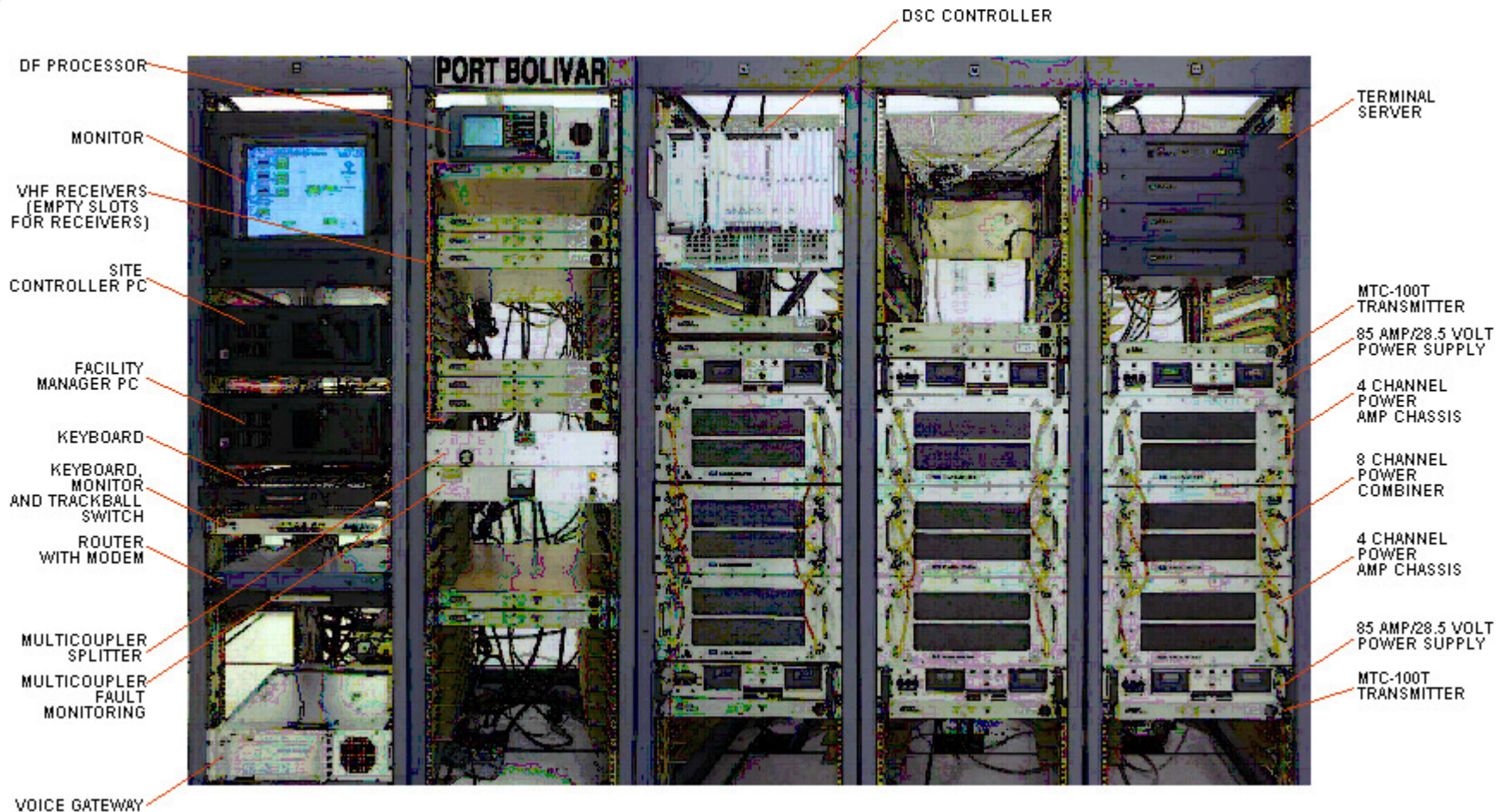
- ✧ MariTEL occupies top 100' of tower
- ✧ DF on top, then VHF
- ✧ Site selection provides contiguous coverage
- ✧ High Availability Design
 - Multiple channels available



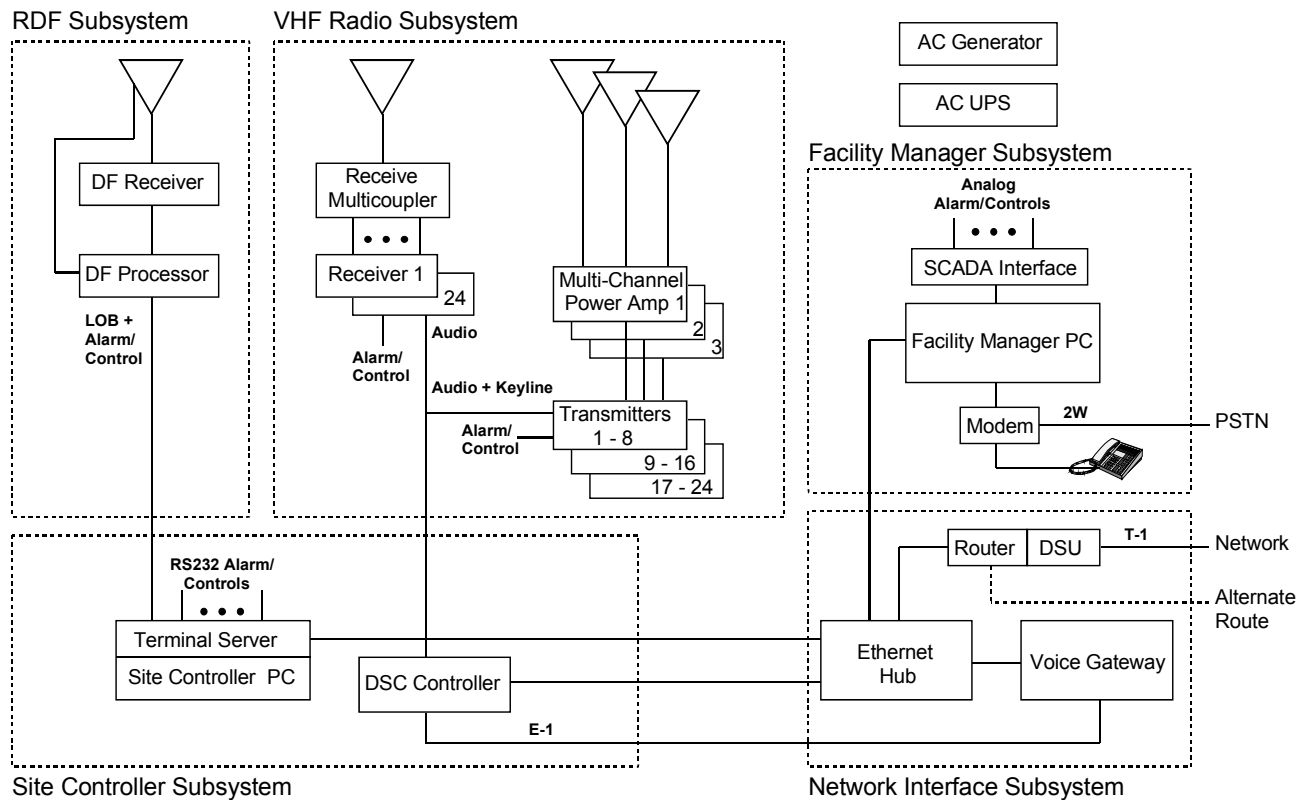
Freeport Public Coast Station



Port Bolivar Radio Suite



MariTEL PCS Site



- Frequency agile 150 –174 MHz system
- Up to 24 VHF transmitters/ receivers with dynamic fallback redundancy and channel 16 guard capability
- DSP-based radios with software upgrade capability
- DSC and Non-DSC Call Capability on each radio with channel 70 distress guard capability
- Radio Direction Finding capability to 108 – 1300 MHz with capability to extend Line-of-Bearing
- Site Controller implements maritime applications with software upgrade capability
- 8 kb/64 kb VoIP radio to network interface for high network efficiency
- Router/ DSU supports alternate Routing and DES encryption for enhanced network availability and security
- AC UPS and AC generator for stable, uninterrupted power
- Facility Manager with primary and alternate routing to MSC monitors and controls PCSE and PCS facilities

MariTEL Network Commercial Services

- ✧ Based on Digital Selective Calling (DSC)
 - The International Standard for Marine Radio Communications
- ✧ Provides Automatic Telephone Interconnect
 - Ship-to-Shore, Ship-to-Shore and Ship-to-Shore-to-Ship
- ✧ Supports Operator-assisted Telephone Interconnect
 - Ship-to-Shore, and Shore-to-Ship for non-DSC radios
- ✧ Virtual Private Network (VPN)
- ✧ Clear Channel for analog data and pass-through of user encryption in analog format
- ✧ Provides Contiguous Coverage
 - Coverage Up to 50 - 100 Miles Offshore
- ✧ Supports Private Communications
- ✧ Provides High Availability

MariTEL Network

Capabilities for Public Safety

- ✧ Provide a complete, compliant platform for NDRS services, including PCS sites, towers, VHF marine radios and network connectivity to US Coast Guard GCC's.
- ✧ Extend Channel 16 Guard to US Coast Guard GCC's
- ✧ Extend Channel 16 Lines-of-Bearing to US Coast Guard GCC's
- ✧ Extend Channel 70 distress messages to US Coast Guard GCC's
- ✧ Support for AIS

Network Products & Services

✧ DSC Telephony

- Automatic Direct Dial Calling
 - Connect to any telephone in the world
- DTMF Tones
 - Use automated switchboard, voice mail, respond to voice prompts

✧ Operator-assisted Telephony

✧ Vessel Location

- Periodic or On Demand Position Reports
- Secure/Private Internet delivery
- Service available 12/01

Vessel Location Service

Template - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

MariTEL
The Marine Telephone Company

Click here to Buy a MariTEL-Ready VHF Radiotelephone **Mari.COM**

Home About Us Services & FAQs Press Room Coverage VHF Help Links Vessel Locator Mari.com

VL Account
logout

~Vessel Locator
~Vessel Detail
~Poll Vessel
~Poll Status
~VL Demo
VL Management
~Add Vessel
~Edit Vessel
~Reactivate Vessel
~Access Rights

Commercial VL > Vessel Locator > Add Vessel

Add Vessel

1. Add vessels one at a time. Include the [MariTEL Vessel Account Number](#).
2. Store additional information such as manifests, crew lists, and voyage schedules (Optional).
3. Save and add another vessel, or save and initiate your Vessel Locator activation. You will receive a confirmation email.
4. Give employees **view only** access (first 5 employees are free).
5. Give others **view only** rights. You have full control over the duration for which they may view your vessel and what information they have access to.
6. For additional security, MariTEL will send **view only** users a randomly generated password. This password will work only for the period of time you define.

1. Add Vessel information

MariTEL Vessel Act #: (MariTEL will verify ownership)

Vessel Name:

Call Sign / Vessel ID: (Optional)

Vessel Size (ft): (Optional)

Vessel Type: (Optional)

Captain's Name: (Optional)

Vessel home port: State:

Date of Activation: Time:

Vessel Position at Activation:
Lat: Lon: or [Select from map](#)

2. Activation Point of Contact

Please designate a point of contact in the event we are unable to start your Vessel Locator service automatically at the time and location you specified above.

First name:
Last name:
Title: Captain
Telephone: ext.
Fax:
Cell phone:
Email:

15 minutes
30 minutes
1 hour
2 hours
4 hours
Bundled Plan (6hrs)

3. Vessel Polling Frequency

Define how often you would like to update the position of your vessel. (See [Pricing](#) for associated costs)

NOTE: If you have a MariTEL bundled plan we will poll your vessel every 6 hours unless you specify a higher interval below

Poll vessel every: 4 hours

4. Store additional information

[Click here](#) to add or remove notes such as manifests, crew details and voyage schedules.

☐ I understand that by adding a vessel I agree to the charges set forth in the [pricing section](#).

Save and add another vessel OR Save and initiate VL Activation

home | trip planner | maritime magazine | weather | community | shopping & reviews | my calendar
© 2009 eMaritel.com. All Rights Reserved

Template - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

MariTEL
The Marine Telephone Company

Click here to Buy a MariTEL-Ready VHF Radiotelephone **Mari.COM**

Home About Us Services & FAQs Press Room Coverage VHF Help Links Vessel Locator Mari.com

VL Account
logout

~Vessel Locator
~Poll Status
VL Management
~Add Vessel
~Edit Vessel
~Reactivate Vessel
~Access Rights

Commercial VL > Vessel Locator
Exxon Vessel Locator

Map Legend

Map Centered at latitude 40.4251 longitude 74.0423

Zoom in Zoom out

Click map to: Zoom in Re-center Select Measure

Tracked Vessels:

Time Zone: [E.S.T.: Eastern Standard Time] From: 12-Feb-1999 To: 12-Feb-1999

Display Tracking on map: ☒ Yes ☐ No

Name	Last Lat	Last Lon	Date	Time	VMG
<input checked="" type="checkbox"/> Sunchaser	40° 43' 46" N	73° 59' 52" W	19-Jun-2001	12:30	35kts.
<input checked="" type="checkbox"/> Senter	54° 43' 46" N	43° 57' 13" W	19-Jun-2001	9:30	10kts.
<input checked="" type="checkbox"/> SeaPike	Out of Range	Out of Range	19-Jun-2001	6:45	7kts.
<input checked="" type="checkbox"/> Temiter	45° 63' 46" N	45° 49' 32" W	20-Jun-2001	7:45	7kts.

~ Select all ~ Deselect all ~ Change Vessels ~ Poll Vessels selected ~ Request Common Delimited File

<< Previous 1 of 10 Next >>

home | trip planner | maritime magazine | weather | community | shopping & reviews | my calendar
© 2009 eMaritel.com. All Rights Reserved

Network Products & Services

✧ Private Voice

- Both sides of the call are scrambled
 - Service available 01/02

✧ Voice Mail

- Message Service - Operators take and hold messages
- Automatic Voice Mail, access from any ship or shore phone
 - Service available Spring 2002

✧ Data

- 9600 baud data e-mail and text messaging
 - Service available Spring 2002

MariTEL Network

Performance Requirements

✧ VHF Radio Coverage

- Communications coverage area matching US Coast Guard requirements defined in NDRSMP specification
- Target talk-in/talk-out RSL for median DAQ 3.4 (20 dB) over the communications coverage area relative to a 1-watt mobile
- A margin of 10.2 dB (95%tile reliability, 98% bounded area percent coverage)

✧ DF Performance

- -2° RMS LOB accuracy over the communications coverage area relative to 1-watt mobile

✧ Call Processing

- DSC and Non-DSC end-end processing functionality throughout the coverage area between mobiles and PSTN
- Median DAQ of 3.4 or better over the communications coverage area between a 1-watt mobile and a PSTN subscriber through the entire network

MariTEL Network

Requirements Verification

MariTEL Network requirements were verified during extensive Operational Test and Evaluation (OT&E) of the first two PCS sites (Port Bolivar and Freeport, Texas) with the initial implementation of the VPN, MSC and Williams NOCC

OT&E Phase I (Site-Level)

- **Facilities (American Tower)**
- **Network Interface (Williams)**
- **PCSE (Harris)**

OT&E Phase II (System-Level)

- **Radio Coverage**
- **DF Coverage**
- **Call Processing**
- **MSC Connectivity and Monitoring**
- **NOC Connectivity**

VHF Radio Coverage Testing[™]

Summary - Port Bolivar

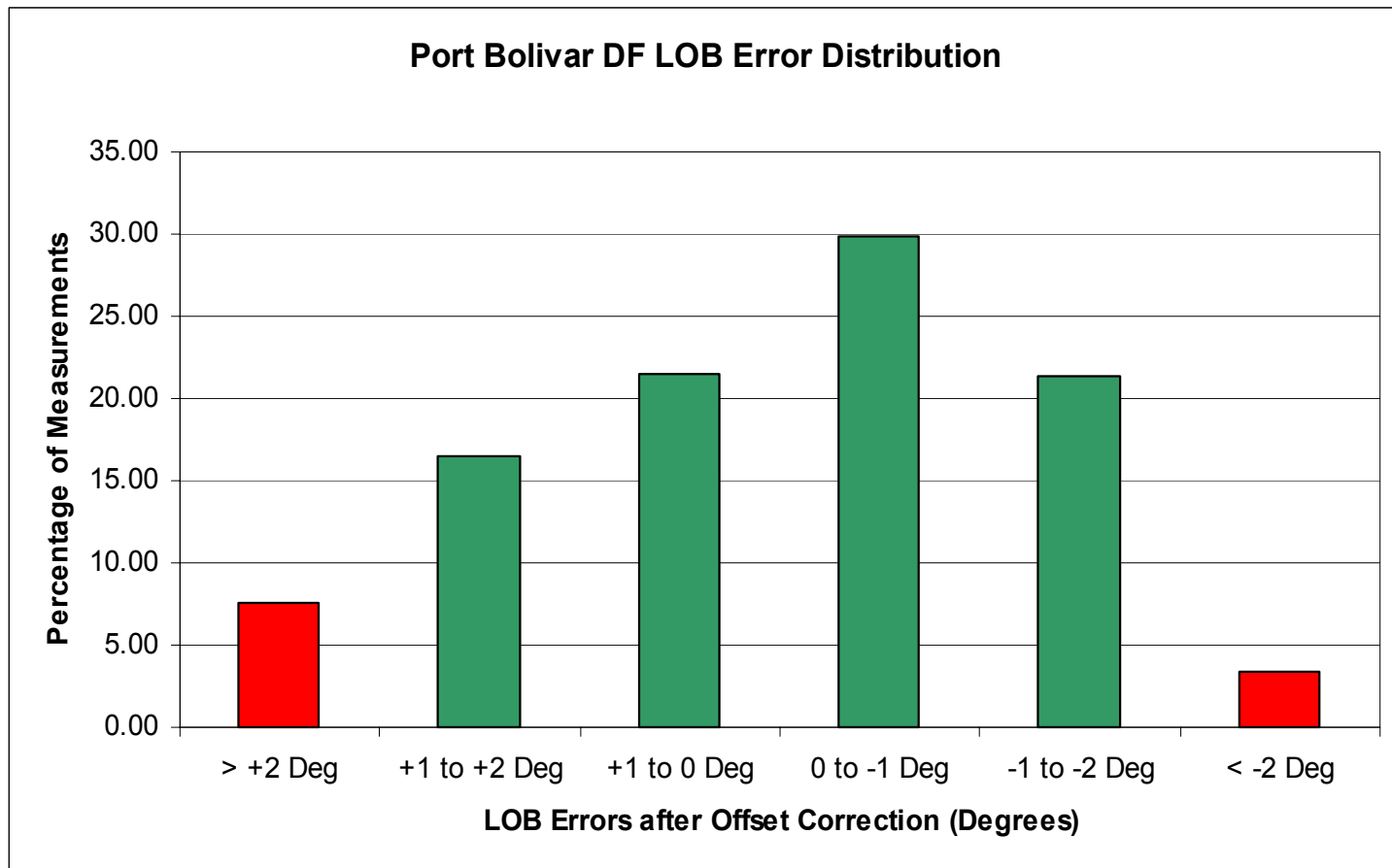
MariTEL Network VHF radio coverage requirements were met with measured talk-in/talk-out RSL's within predicted margin

Measurement Analysis Summary—Predicted vs. Measured Signal Strength Using VHF Maritime Model					
Base	Location of Mobile	Talk-In		Talk Out	
		Mean Error	Std. Dev.	Mean Error	Std. Dev.
Pt. Bolivar	Sea	1.85	3.79	3.51	2.54
Pt. Bolivar	Land	9.49	10.23	3.89	7.42
Pt. Bolivar	Combined	4.43	7.61	3.62	4.53

DF LOB Error Distribution

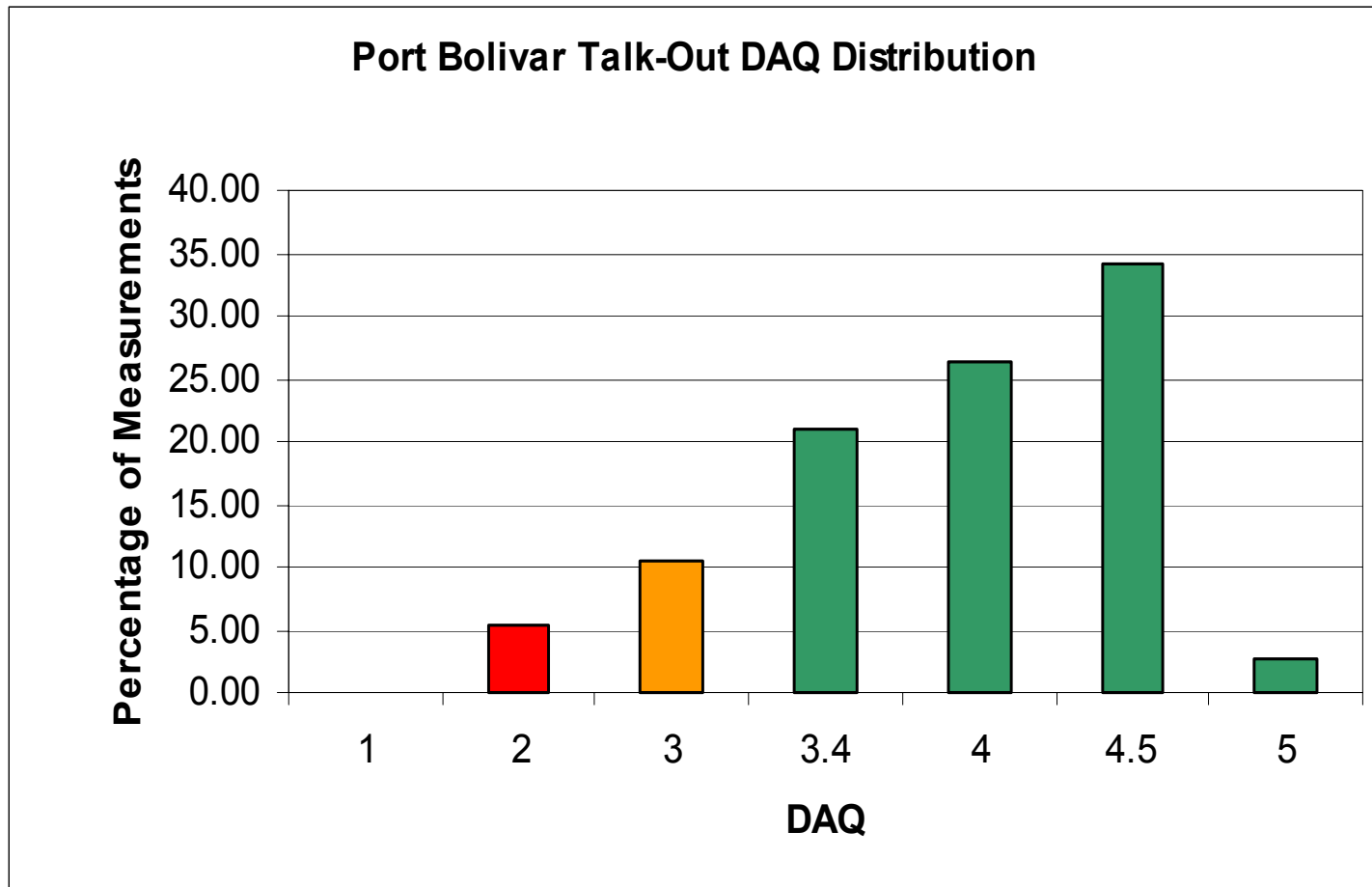
Port Bolivar

MariTEL Network LOB accuracy requirements were met with a mean RMS LOB accuracy of 1.3°



Talk-Out Call Quality Distribution - Port Bolivar

MariTEL Network requirement for mean DAQ of 3.4 was met
in the limiting case



Network Deployment Schedule

- ✧ Initial Capability: October 2000
 - Test and Development Sites Freeport and Port Bolivar, TX
- ✧ Operations Commence: June 2001
 - 9 sites on the Network
- ✧ Today: November 2001
 - 23 sites on the Network
- ✧ December 2001
 - 29 sites on the Network
- ✧ April 2002
 - 35 sites on the Network
 - Coverage from Corpus Christi, TX to Ft. Myers, Fl and to Memphis, TN

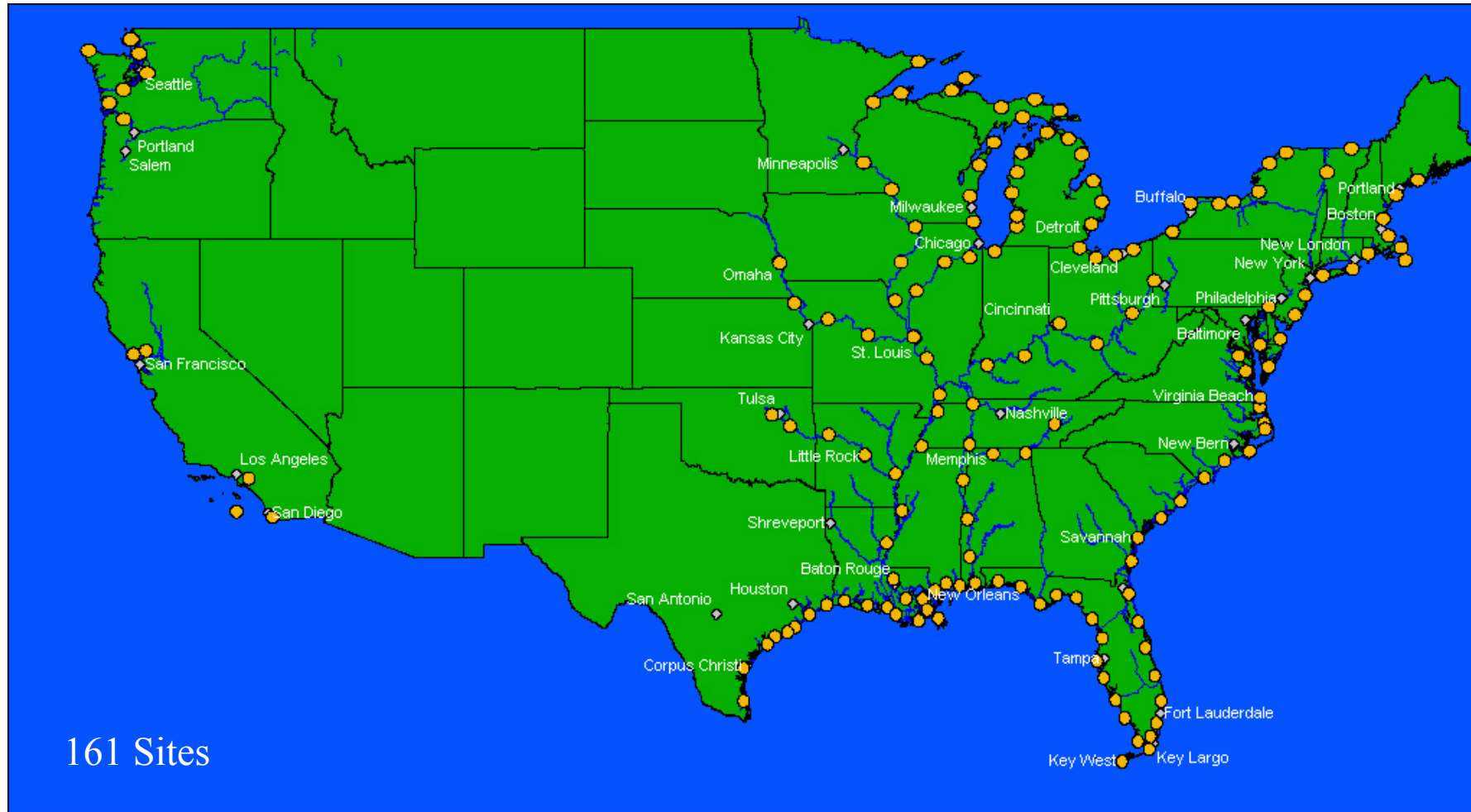
ACTIVATION PLAN
29 SITES ACTIVE

-
- ACTIVE SITES**
- INACTIVE SITES**
- Legend**
- Active End of DEC. 2001
- Inactive End of DEC. 2001
- Installation
- Map of the United States showing the distribution of active and inactive sites as of the end of December 2001. The map highlights the Gulf Coast region, including Texas, Louisiana, Mississippi, Alabama, and Florida. Active sites are marked with blue dots and inactive sites with red dots. Each site is labeled with a number in a yellow box. Major cities are labeled in black text. The map shows a high concentration of sites along the Gulf Coast, particularly in Texas and Louisiana, with a few sites in the Southeast.

Region 1 Network Coverage



Commercial Network



Maintenance

✧ 24/7 Network status monitoring

- The Network has multiple paths to move traffic between any two points. This can be reprovisioned automatically in real time.

✧ 24/7 Site status monitoring

- Drill down to smallest replaceable component from NOC via VPN
- The operating software in the site controller and in the radio equipment at the site can be re-programmed by the VPN without visiting the site.

For More Information

- ✧ For more information on the MariTEL Network, please contact:
- ✧ Jim Tindall
Vice President of Marketing
16 East 41st Street
New York, NY 10017
212-532-9300, ext 17
- ✧ Visit our Web site: <http://www.maritelusa.com>